



STATUS OF THE FLORIDA SOFT CRAB INDUSTRY

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HISTORICAL PRODUCTION AND VALUE

The Florida soft crab fishery is relatively young when compared to the Chesapeake Bay fishery. Soft-shell blue crab production had been attempted many times in Florida, but few operations were successful and virtually none continued for more than a couple of years. A true commercial fishery for soft crabs didn't begin until the mid-1950's following an experimental shedding project at Punta Gorda, Florida in 1953 (Young, 1955). However, commercial operations in Florida did not generate any significant production until the 1960's. At that time, shedding operations were centered in southwest Florida (Charlotte Harbor) and the Panhandle (Apalachicola Bay).

Historically, production has varied drastically from year to year with an extreme slump period from 1968-1977 (Table 1). Since 1978, there has been a marked increase in production, with a record of 53,567 pounds reported in 1982 (NMFS statistics). Production averages for the 1960's, 70's and 80's were 5,169, 3,645 and 30,863 pounds/year, respectively.

During the period from 1960 to 1982, exvessel price averaged 65 cents/pound (Table 1). However, in 1983 the exvessel price jumped to \$2.22/lb., with a small decline in production. This trend continued into 1984. The total exvessel value of this fishery in 1983 was reported to be nearly 80,000 dollars (NMFS statistics). Unfortunately, the reported exvessel value combines the price paid to crabbers for premolt (peeler) crabs as well as the price received by those crabbers that produce the actual soft crab product before selling. For that reason, the inflated price per pound in recent years may only reflect that more crabbers are shedding crabs before selling them.

SEA GRANT EXTENSION ACTIVITIES

Florida Sea Grant involvement with the soft crab fishery began in 1978 with basic advisory service consultations and an intensive review of the literature and fishery as it existed nationwide (Otwell and Cato, 1982). Early clientele interest was focused primarily in the St. John's River (NE Florida) and Crystal River (central gulf coast) areas. This interest initiated a demonstration shedding project at Palatka, Florida using floats in the St. John's River during 1979. The demonstration project culminated in several publications and fact sheets (Otwell, 1980; Otwell *et al*, 1980; Otwell *et al*, 1981), which were disseminated during a series of workshops held around the state from 1980 to 1983. These workshops (fourteen total) were held in the major blue crab producing

areas, including Apalachicola, Cross City, Crystal River, Punta Gorda, Palatka, and Fernandina Beach, reaching more than 400 interested persons. The number of soft crab shedding operations jumped markedly from a half dozen in 1978 to near thirty by the end of 1982, resulting in the corresponding increase in production as previously denoted. By 1983, Florida had become fifth nationwide in reported production of soft crabs (Table 2).

With the increased interest in soft crabs in Florida, several problem areas became evident that required further attention, particularly shedding mortality and peeler harvest. To address the mortality issues a closed system demonstration project was started in 1983 at Punta Gorda, Florida. Technology utilized in other states, particularly protein skimmers and biological filters, were incorporated to improve water quality in the shedding tanks, thereby decreasing shedding mortality. Preliminary results have been very encouraging and a Sea Grant report will be forthcoming. Consistent supply of peeler crabs has also been a constant problem for this fishery in Florida, and a peeler pound (or bank trap) demonstration project was initiated in 1984 near Ft. Myers to adapt this type of gear to Florida gulf coast habitats. Trap designs were patterned after those used in the Chesapeake Bay fishery, with modifications made to suit the extremely shallow slopes of the estuaries of southwest Florida. This project is still ongoing with a report expected by the end of 1985.

In addition to the demonstration projects, questions concerning the nutritional and microbial attributes of fresh soft crabs were examined, particularly in relation to shelflife and handling requirements (Otwell and Koburger, 1985).

DESCRIPTION OF THE FISHERY: A SURVEY

Florida Sea Grant, having been involved in the development of the Florida soft crab fishery since 1978, decided that an evaluation of the status of this fishery was necessary to determine to what extent Sea Grant Extension activities would be needed to further its development. To that end, this author, in cooperation with Florida Sea Grant marine extension agents and specialists, conducted a survey of the 1983 soft crab producers. Out of 28 identified blue crab shedding operations known to be producing soft shell crabs in 1983, 22 (78.6%) cooperated in filling out a fishery questionnaire which included sections describing their shedding facility, harvest methods, product types, production and sales data, and production costs. The remainder of this paper will be the findings of that survey.

Shedding operations:

Being a relatively young fishery, the experience level of the Florida producers was fairly low as seen in the average number of years in business (3.75 years). Approximately three persons operate an average shedding facility in Florida and use about

sixteen wooden table tanks (4'x8'x8" box on legs) to hold their pre-molt crabs (peelers) to await their molt (shedding). Only two shedders interviewed utilized anything other than table tanks, that being cement tanks of varying dimensions. These were not preferred due their expense in manufacturing and the difficulty experienced in sorting crabs from such systems.

The type of water flow systems utilized are almost equally distributed among open, flow through systems (36.4%), completely closed, recirculating, systems (31.8%), and semi-closed systems (31.8%). The latter of which are open systems modified to act as a closed system for short periods of time.

Filter systems ranged from none (19%) to high tech bio-disk filters with protein skimmers. The most common filter was simply some form of physical filtration (screens, foam rubber, spun glass, etc. - 66.7%), followed by biological filtration (47.6%). Generally, physical and biological filters were combined (47.6%). Other forms of filtration used were protein skimmers (9.5%) and algal filters (9.5%).

Harvest methods:

In general, 3-4 crabbers supplied peeler crabs to each shedding facility (mean = 3.45). Florida's peeler crab fishery has remained primarily a nondirected fishery, with 85% of the soft crab operations acquiring some, or all, of their peelers incidental to traditional blue crab catch, using standard blue crab traps. However, many crabbers were beginning to use directed gear, such as peeler traps (baited with large male crabs (jimmies) or unbaited) and peeler pounds (bank traps). It was common to find a combination of trapping methods being used (70% of the operations), since most producers had trouble getting enough peelers to shed and needed to acquire them in as many ways as possible. In most cases, the operations that produced soft crabs consistently were ones in which the operator directly fished for peeler crabs.

The season for peeler crab harvest in Florida, as in other states, is controlled by environmental and biological parameters rather than by regulation. It generally begins by mid-March, with a 4 to 6 week peak in April and May. A summer lull period occurs in July and August, followed by a short fall peak in September. One soft crab shedding facility did continue operations throughout the year in 1983, but most shut down by the end of October.

Product types:

Six size grades of soft crabs are produced in Florida. Almost eighty percent of the product is in the largest two size classes, whales and jumbos (Table 2). The other grades are primes, hotels, mediums and smalls.

The bulk of Florida's soft crabs were marketed frozen (93%). The remaining fresh product (7%) was marketed early in the season prior to the onset of the Chesapeake run (generally by mid-May) and/or to local restaurants and retail seafood markets.

Production:

The majority of the soft crabs were produced on the west coast of Florida, with the Big Bend region from Apalachicola to Cedar Key accounting for 45.4% of the 1983 production (48,070 lbs.- Figure 1). Based on the survey results, the total soft crab production in Florida for 1983 was 105,969 pounds. This value is almost three times the reported production of 35,908 pounds, according to National Marine Fisheries Service statistics (Table 3). This was expected since a large percentage of Florida's production is from small-scale backyard operations run by individual crabbers. These operations are difficult to identify and obtain data from by NMFS port agents. Nevertheless, the survey results do indicate that the soft crab fishery in Florida is much larger than previously estimated.

Economics:

Soft crabs are sold by the dozen in Florida, as is the case in most states. Prices received per dozen varied throughout the year, depending upon supply and size. Average price per dozen ranged from \$7.00/dozen for smalls to a high of \$24.00/dozen for whales. Taking into account the number of dozen produced in each size class, the average price per dozen received overall was \$13.93 (approximately \$4.64/lb.), with total Florida sales at the wholesale level reaching nearly \$476,000 in 1983.

The major expenditure for each shedding firm was the price paid to crabbers for each individual peeler crab. This varied from a flat rate price to a graded price based upon rank of the peeler crab (i.e., white, pink, red). The average price across all ranks was \$0.31 per crab.

Expenditures to operate the facility included rent or mortgage, electricity, labor, supplies and miscellaneous. These expenses averaged \$275.00 per month.

Future Development Needs:

Three areas of need were commonly pointed out by soft crab producers during the survey. These were: 1) maintaining a consistent supply of peelers, 2) reducing shedding mortality and 3) improving marketing. As stated earlier, Florida Sea Grant has begun to address mortality and peeler supply issues, although published information is not yet available. Technology and information from other soft crab producing states has been distributed to producers upon request or during individual

consultations to assist them with problems of these kinds. Concerning marketing, Florida Sea Grant has not taken an active role, leaving this area up to the industry itself and the Florida Department of Natural Resources, Bureau of Marketing and Extension. However, to educate potential buyers as to where soft crabs can be found in Florida, a soft crab producers list for Florida has been produced since 1982 and is available from the Florida Sea Grant Extension Program.

Future Sea Grant involvement in this fishery will be devoted to mainly to advisory services and individual consultations to improve efficiency of the already existing operations and encourage directed effort to the harvest of peeler crabs. Any future workshops would be focused on these specific topics. In addition, a possible in-depth economic analysis of this fishery has been discussed as a future project.

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Table 1

TOTAL ANNUAL LANDINGS AND VALUE OF SOFT
BLUE CRABS IN FLORIDA, 1960 - 1984

Year	Total Pounds (shedded)	Total Value (\$) (exvessel)	Value/Pound (\$) (exvessel)*
1960	4,550	2,275	.50
1961	5,511	2,756	.50
1962	375	188	.50
1963	4,200	2,100	.50
1964	15,063	7,230	.48
1965	12,643	9,229	.73
1966	1,030	288	.28
1967	7,487	4,717	.63
1968	325	130	.40
1969	504	186	.37
Ten year average:	5,169	2,910	.49
1970	451	248	.55
1971	35	14	.40
1972	152	147	.97
1973	0	---	--
1974	281	169	.60
1975	2,106	1,664	.79
1976	235	193	.82
1977	205	242	1.18
1978	23,659	28,368	1.20
1979	9,328	5,031	.54
Ten year average:	3,645	3,608	.71
1980	16,866	12,228	.73
1981	22,631	14,530	.64
1982	53,567	51,741	.97
1983	35,908	79,878	2.22
1984**	25,343	70,070	2.76
Five year average:	30,863	45,689	1.46

* Value computed from reported total value data.

** Estimated from partial NMFS statistics.

Source: National Marine Fisheries Service, Statistical Department,
Southeast Fisheries Center, Miami, FL.

Table 2

FLORIDA SOFT CRAB FISHERY - 1983

Product Types

Whales:	(5.5*)	44.0%
Jumbos:	(5.0 - 5.5)	34.5
Primes:	(4.5 - 5.0)	11.6
Hotels:	(4.0 - 4.5)	2.5
Mediums:	(3.5 - 4.0)	7.0
Smalls:	(3.5)	0.3
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Fresh:		7.0 %
Frozen:		93.0
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*Inches carapace width; size ranges
subject to change depending on
marketing areas.

Table 3

REPORTED U.S. SOFT CRAB PRODUCTION - 1983

<u>STATE</u>	<u>POUNDS (%)</u>
MARYLAND	3,525,591 (79.7)
VIRGINIA	657,847 (14.9)
LOUISIANA	101,497 (2.3)
NORTH CAROLINA	87,570 (2.0)
FLORIDA	35,908 (0.8)
GEORGIA	11,251 (0.3)
SOUTH CAROLINA	3,691 (0.1)
AL, MS, TX, DE	<u>0</u>
TOTAL	4,423,355

Figure 1: FLORIDA SOFT CRAB PRODUCTION - 1983

